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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,010	11/01/2001	Gerald G. Pechanek	800.0046	7418

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EXAMINER

DO, CHAT C

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/004,010

Applicant(s)

PECHANЕК ET AL.

Examiner

Chat C. Do

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2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-6, 17-21 and 39-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-6, 17-21 and 39-41 is/are allowed.
- 6) ☒ Claim(s) 42-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This communication is responsive to Amendment filed 12/15/2005.
2. Claims 3-6, 17-21, and 39-45 are pending in this application. Claims 3, 17, 39, 42, and 44 are independent claims. In Amendment, claims 1-2, 7-16, and 22-38 are cancelled and claims 42-45 are added. This Office Action is made final.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 42-45 are rejected under 35 U.S.C. 103(a) as being obvious over Greenberger (U.S. 6,411,979) in view of Sih et al. (U.S. 6,557,022).

Re claims 42-43, Greenberger discloses in Figures 1b and 2-3 an apparatus for extending the precision of a complex multiplication the apparatus (e.g. col. 2 lines 60-68 and col. 7 lines 20-31) comprising: a storage means (e.g. Figure 2 parts 16.11, 16.12, 16.21, and 16.22) for storing products produced in a first cycle of operation (e.g. col. 2 lines 60-68) ; adder means (e.g. Figure 2 parts 34.1 and 34.2) for simultaneously performing additions and subtractions of products in a second cycle of operation to produce a conjugated or nonconjugated result (e.g. output of Figures 2-3); accumulator

means (e.g. Figure 3 part 34.1 and 34.4 with summer) for simultaneously performing accumulation in the second cycle of operation to accumulate the results of adder means the current contents of a second storage means, wherein second storage means is further for storing the results of accumulator means (e.g. col. 6 line 50 to col. 7 line 52).

Greenberger fails to disclose an extended precision storage means for storing an interim result, wherein accumulator means simultaneously performs accumulation in the second cycle of operation to accumulate the result of adder means with both the current contents of second storage means and the interim result stored in extended precision storage means, wherein extended precision storage means stores extended precision results of accumulator means at the completion of the accumulation means wherein the real and imaginary components of the conjugated or nonconjugated result are each 32 bits, and the extended precision results are each 8 bits. However, Sih et al. disclose in Figure 2 an accumulator (e.g. 220 and 222) with extended precision storage means for storing an interim result (e.g. output of 220 and 222), wherein accumulator means simultaneously performs accumulation in the second cycle of operation to accumulate the result of adder means with both the current contents of second storage means and the interim result stored in extended precision storage means, wherein extended precision storage means stores extended precision results of accumulator means at the completion of the accumulation means (e.g. col. 3 lines 14-44) wherein the real and imaginary components of the conjugated or nonconjugated result are each 32 bits, and the extended precision results are each 8 bits (e.g. product of operands is 32 bits and adder output is 40 so the extended precision result is 8-bits). Therefore, it would have been obvious to a person

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having ordinary skill in the art at the time the invention is made to add an extended accumulator storage means with 8-bits extended as seen in Shi et al.'s Figure 2 into Greenberger's invention because it would enable to produce a précised result (e.g. col. 3 line 65 to col. 4 line 2).

Re claim 44, it is a method claim of claim 42. Thus, claim 44 is also rejected under the same rationale as cited in the rejection of rejected claim 42.

Re claim 45, it is a method claim of claim 43. Thus, claim 45 is also rejected under the same rationale as cited in the rejection of rejected claim 43.

#### *Allowable Subject Matter*

5. Claims 3-6, 17-21, and 39-41 are allowed.

#### *Response to Arguments*

6. Applicant's arguments with respect to claims 42-45 have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do  
Examiner  
Art Unit 2193

February 13, 2006

  
**KAKALI CHAKI**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**